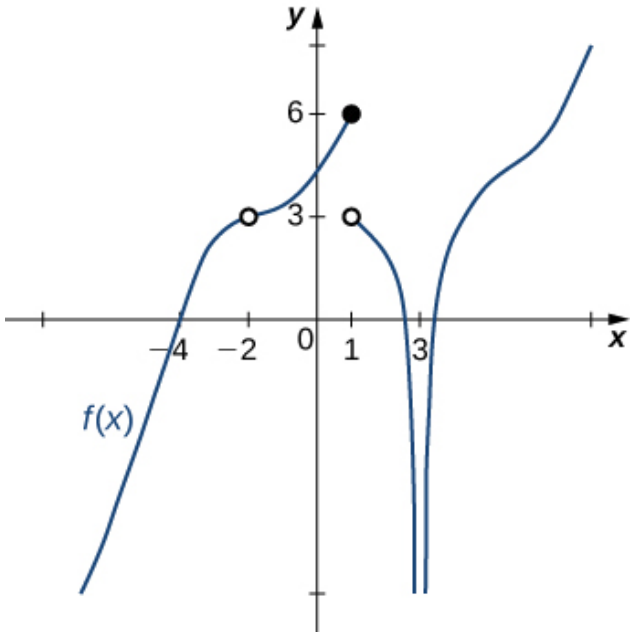
1. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x)$ does not exist.



A. 1

B. -2

C. 3

D. Multiple a make the statement true.

E. No a make the statement true.

---

2. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to -1^+} \frac{8}{(x-1)^7} + 5$$

A. $-\infty$

B. ∞

C. $f(-1)$

D. The limit does not exist

E. None of the above

3. Evaluate the limit below, if possible.

$$\lim_{x \to 8} \frac{\sqrt{9x - 36} - 6}{2x - 16}$$

A. 0.083

B. 1.500

C. ∞

D. 0.042

E. None of the above

4. Based on the information below, which of the following statements is always true?

As x *approaches* 2, $f(x)$ *approaches* 0.774.

A. $f(x)$ is close to or exactly 0.774 when x is close to 2

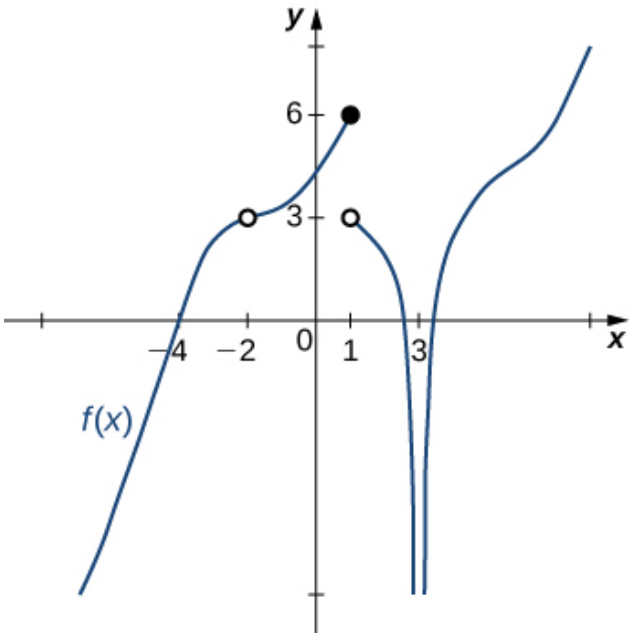
B. $f(x) = 2$ when x is close to 0.774

C. $f(x) = 0.774$ when x is close to 2

D. $f(x)$ is close to or exactly 2 when x is close to 0.774

E. None of the above are always true.

5. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = 3$.



A. $-\infty$

B. -2

C. 1

D. Multiple a make the statement true.

E. No a make the statement true.

---

6. Evaluate the limit below, if possible.

$$\lim_{x \to 7} \frac{\sqrt{6x-6}-6}{9x-63}$$

A. ∞

B. 0.083

C. 0.056

D. 0.272

E. None of the above

---

7. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 3^+} \frac{-6}{(x+3)^3} + 3$$

A. ∞

B. $-\infty$

C. $f(3)$

D. The limit does not exist

E. None of the above

---

8. To estimate the one-sided limit of the function below as x approaches 6 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{6}{x} - 1}{x - 6}$$

A. $\{6.0000, 5.9000, 5.9900, 5.9990\}$

B. $\{5.9000, 5.9900, 6.0100, 6.1000\}$

C. $\{6.1000, 6.0100, 6.0010, 6.0001\}$

D. $\{5.9000, 5.9900, 5.9990, 5.9999\}$

E. $\{6.0000, 6.1000, 6.0100, 6.0010\}$

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9. To estimate the one-sided limit of the function below as x approaches 7 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{7}{x} - 1}{x - 7}$$

A. $\{6.9000, 6.9900, 7.0100, 7.1000\}$

B. $\{7.0000, 6.9000, 6.9900, 6.9990\}$

C. $\{6.9000, 6.9900, 6.9990, 6.9999\}$

D. $\{7.0000, 7.1000, 7.0100, 7.0010\}$

E. $\{7.1000, 7.0100, 7.0010, 7.0001\}$

---

10. Based on the information below, which of the following statements is always true?

$$As\ x\ approaches\ 4,\ f(x)\ approaches\ 1.61.$$

A. $f(1) = 4$

B. $f(4)$ is close to or exactly 1

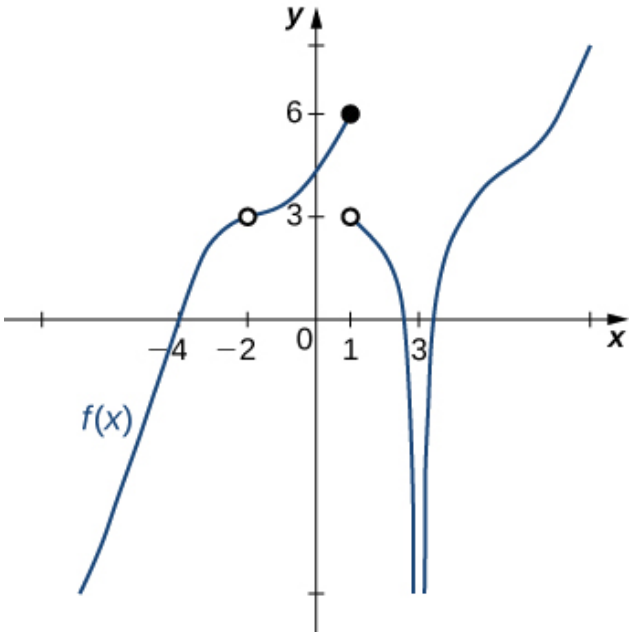
C. $f(4) = 1$

D. $f(1)$ is close to or exactly 4

E. None of the above are always true.

---

11. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = -\infty$.



A. $-\infty$

B. 3

C. -2

D. Multiple a make the statement true.

E. No a make the statement true.

---

12. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 4^-} \frac{-1}{(x-4)^4} + 7$$

A. ∞

B. $-\infty$

C. $f(4)$

D. The limit does not exist

E. None of the above

---

13. Evaluate the limit below, if possible.

$$\lim_{x \to 8} \frac{\sqrt{6x-32} - 4}{4x - 32}$$

A. 0.188

B. ∞

C. 0.612

D. 0.125

E. None of the above

---

14. Based on the information below, which of the following statements is always true?

As x approaches 4, $f(x)$ approaches 2.891.

A. $f(4)$ is close to or exactly 2

B. $f(2)$ is close to or exactly 4

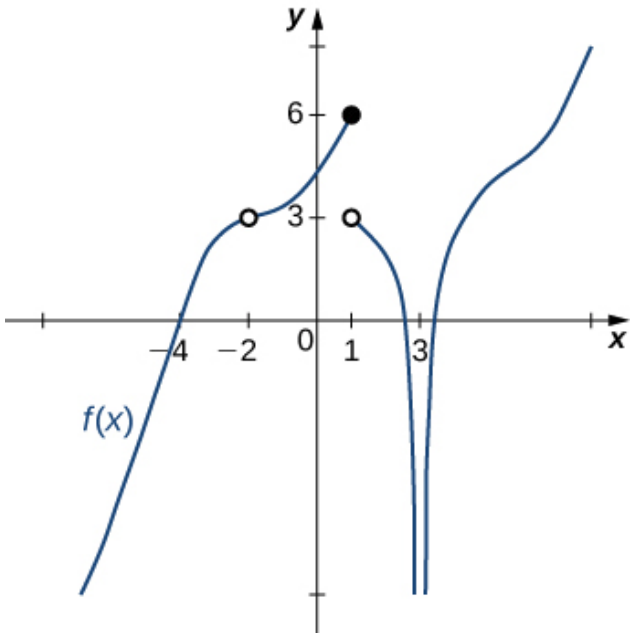
C. $f(2) = 4$

D. $f(4) = 2$

E. None of the above are always true.

---

15. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x)$ does not exist.



A. 1

B. 3

C. -2

D. Multiple a make the statement true.

E. No a make the statement true.

---

16. Evaluate the limit below, if possible.

$$\lim_{x \to 8} \frac{\sqrt{7x - 7} - 7}{5x - 40}$$

A. 0.529

B. 0.014

C. ∞

D. 0.071

E. None of the above

---

17. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to -4^-} \frac{7}{(x+4)^3} + 5$$

A. $f(-4)$

B. ∞

C. $-\infty$

D. The limit does not exist

E. None of the above

---

18. To estimate the one-sided limit of the function below as x approaches 9 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{9}{x} - 1}{x - 9}$$

A. $\{8.9000, 8.9900, 8.9990, 8.9999\}$

B. $\{9.1000, 9.0100, 9.0010, 9.0001\}$

C. $\{9.0000, 9.1000, 9.0100, 9.0010\}$

D. $\{8.9000, 8.9900, 9.0100, 9.1000\}$

E. $\{9.0000, 8.9000, 8.9900, 8.9990\}$

---

19. To estimate the one-sided limit of the function below as x approaches 10 from the right, which of the following sets of numbers should you

use?

$$\frac{\frac{10}{x} - 1}{x - 10}$$

A. $\{10.0000, 9.9000, 9.9900, 9.9990\}$

B. $\{10.1000, 10.0100, 10.0010, 10.0001\}$

C. $\{9.9000, 9.9900, 10.0100, 10.1000\}$

D. $\{9.9000, 9.9900, 9.9990, 9.9999\}$

E. $\{10.0000, 10.1000, 10.0100, 10.0010\}$

---

20. Based on the information below, which of the following statements is always true?

As x *approaches* 0, $f(x)$ *approaches* 10.544.

A. $f(x)$ is close to or exactly 10.544 when x is close to 0

B. $f(x)$ is close to or exactly 0 when x is close to 10.544

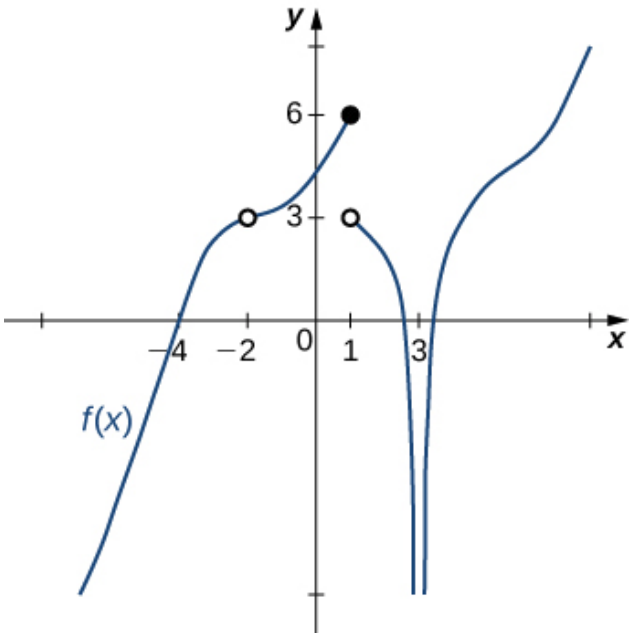
C. $f(x) = 10.544$ when x is close to 0

D. $f(x) = 0$ when x is close to 10.544

E. None of the above are always true.

---

21. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = 0$.



A. -4

B. 0

C. 3

D. Multiple a make the statement true.

E. No a make the statement true.

---

22. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 2^-} \frac{-7}{(x-2)^4} + 4$$

A. $f(2)$

B. ∞

C. $-\infty$

D. The limit does not exist

E. None of the above

---

23. Evaluate the limit below, if possible.

$$\lim_{x \to 9} \frac{\sqrt{7x - 27} - 6}{6x - 54}$$

A. 0.441

B. 0.014

C. ∞

D. 0.083

E. None of the above

---

24. Based on the information below, which of the following statements is always true?

As x approaches 3, $f(x)$ approaches ∞.

A. $f(x)$ is close to or exactly 3 when x is large enough.

B. x is undefined when $f(x)$ is close to or exactly ∞.

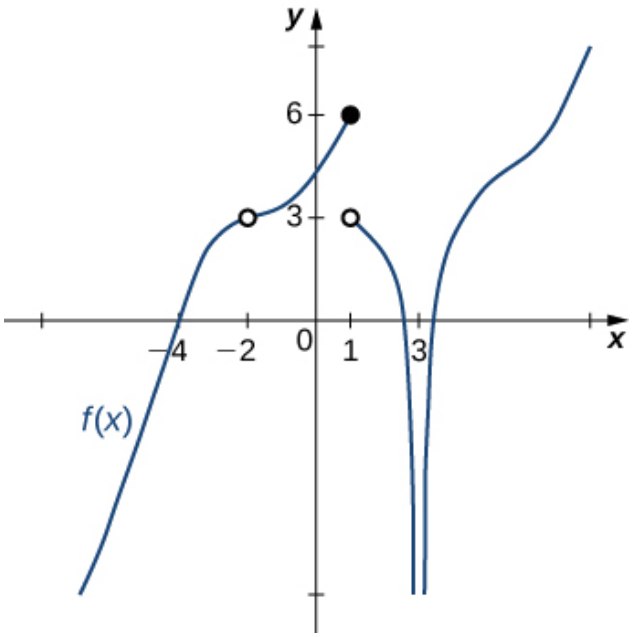
C. $f(x)$ is close to or exactly ∞ when x is large enough.

D. $f(x)$ is undefined when x is close to or exactly 3.

E. None of the above are always true.

---

25. For the graph below, evaluate the limit: $\lim_{x \to -2} f(x)$.



A. $-\infty$

B. -2

C. 3

D. The limit does not exist

E. None of the above

---

26. Evaluate the limit below, if possible.

$$\lim_{x \to 7} \frac{\sqrt{5x - 10} - 5}{3x - 21}$$

A. 0.100

B. 0.745

C. ∞

D. 0.167

E. None of the above

---

27. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 3^+} \frac{-1}{(x-3)^4} + 8$$

A. $-\infty$

B. ∞

C. $f(3)$

D. The limit does not exist

E. None of the above

---

28. To estimate the one-sided limit of the function below as x approaches 8 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{8}{x} - 1}{x - 8}$$

A. $\{8.0000, 8.1000, 8.0100, 8.0010\}$

B. $\{7.9000, 7.9900, 8.0100, 8.1000\}$

C. $\{8.0000, 7.9000, 7.9900, 7.9990\}$

D. $\{8.1000, 8.0100, 8.0010, 8.0001\}$

E. $\{7.9000, 7.9900, 7.9990, 7.9999\}$

---

29. To estimate the one-sided limit of the function below as x approaches 9 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{9}{x} - 1}{x - 9}$$

A. $\{9.0000, 8.9000, 8.9900, 8.9990\}$

B. $\{8.9000, 8.9900, 8.9990, 8.9999\}$

C. $\{9.1000, 9.0100, 9.0010, 9.0001\}$

D. $\{8.9000, 8.9900, 9.0100, 9.1000\}$

E. $\{9.0000, 9.1000, 9.0100, 9.0010\}$

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30. Based on the information below, which of the following statements is always true?

As x *approaches* 8, $f(x)$ *approaches* 12.177.

A. $f(8)$ is close to or exactly 12

B. $f(8) = 12$

C. $f(12)$ is close to or exactly 8

D. $f(12) = 8$

E. None of the above are always true.
